

Operation and Maintenance Plan

The stormwater treatment facilities will be maintained by the owner or their assigned heirs after construction is completed. The contract documents will require the contractor to designate a person responsible for maintenance of the sedimentation control features during construction as required by the Erosion Control Report. Long-term operation and maintenance for the stormwater management facilities is presented below.

Maintenance will be performed as described and required in the permit unless and until the system is formally accepted by a municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system.

Post Construction:

The following standards will be met after construction is complete:

Maintenance Contract:

The owner will contract with a third-party or other qualified professional with knowledge of erosion and stormwater control, including the standards and conditions in the permit. The contractor will be approved by the Maine Department of Environmental Protection, for the inspection and removal of accumulated sediments, oils, and debris from the entire stormwater management system.

Re-Certification:

The owner will submit a certification of the following to the department within three months of the expiration of each five-year interval from the date of issuance of the permit:

- (a) Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
- (b) Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.
- (c) Maintenance. The erosion and stormwater maintenance plan for the site is being implemented as written and the maintenance log is being maintained. Any modifications to the plan have been submitted to and approved by the department.

Documentation:

A maintenance log will be kept (i.e. report) summarizing inspections, maintenance, and any corrective actions taken. The log will include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediments or debris, the location where the sediment and debris was disposed after removal will be indicated. The log will be made accessible to department staff and a copy provided to the department upon request.

Inspection and Maintenance Frequency and Corrective Measures:

The following areas, facilities, and measures will be inspected and the identified deficiencies will be corrected. Clean-out must include the removal and legal disposal of any accumulated sediments and debris.

Catch Basins:

Inspect catch basins 2 times per year (preferably in spring and fall) to ensure that the catch basins are working in their intended fashion and that they are free of debris. Clean structures when sediment depths reach 12" from invert of outlet. If the basin outlet is designed with a hood to trap floatable materials (i.e. Snout), check to ensure watertight seal is working. At a minimum, remove floating debris and hydrocarbons at the time of the inspection.

Culverts:

Inspect culverts 2 times per year (preferably in spring and fall) to ensure that the culverts are working in their intended fashion and that they are free of debris. Remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit and to repair any erosion damage at the culvert's inlet and outlet.

Stormwater Detention / Retention Facilities:

Inspect all upstream pre-treatment measures for sediment and floatables accumulation. Remove and dispose of sediments or debris as needed.

Surface:

Inspect pond annually to ensure that it is working in its intended fashion and that it is free of trash and debris. Remove and properly dispose of any accumulated sediment or debris as needed. Inspect the embankments and spillways for settlement, slope erosion, and downstream swamping. Mow the embankment and/or vegetated spillway to control woody vegetation. Inspect Outlet Control Structures to ensure they are good working order and that the orifice and trash racks are unobstructed from trash and debris. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

Sub-Surface:

Inspect sub-surface chamber or pipe system 2 times per year (preferably in Spring and Fall) via the inspection ports, cleanouts, or other access structure. Clean system per manufacturer's recommendations. Inspect Outlet Control Structures to ensure they are good working order and are unobstructed from trash and debris. Remove and dispose of any sediments or debris.

Soil Filter – Bio-Filtration:

Inspect all upstream pre-treatment measures for sediment and floatables accumulation. Remove and dispose of any sediments or debris.

Surface (Underdrain Pond, Swale or Bio-Filter):

The soil filter will be inspected within the first three months after construction; thereafter the filter will be inspected 2 times per year to ensure that the filter is draining within 72 hours of a rain event equivalent to 1/2" or more. Failure to drain in 72 hours will require part or all of the soil filter media to be removed and replaced with new material meeting the soil filter gradation. Vegetated ponds or swales will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and to control the accumulation of sediments in order to maintain the water quality volume. Any woody vegetation or accumulated sediment must be removed. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

Sub-surface:

The soil filter will be inspected within the first three months after construction; thereafter the filter will be inspected 2 times per year to ensure that the filter is draining within 72 hours of a rain event equivalent to 1/2" or more. Failure to drain in 72 hours will require part or all of the top 3 inches of the soil filter media to be removed and replaced with new material meeting the soil filter gradation. Inspection can be accomplished by using the observation well, inspection port, and/or access structure for underground chamber systems.

Stormwater Infiltration Facilities:

Inspect all upstream pre-treatment measures for sediment and floatables accumulation. Remove and dispose of sediments or debris as needed.

Surface:

The infiltration facility will be inspected within the first three months after construction; thereafter the filter will be inspected 2 times per year to ensure that the filter is draining within 72 hours of a rain event equivalent to 1/2" or more. Failure to drain in 72 hours will require part or all of the top 3 inches of the infiltration area to be removed and replaced with new like material. Vegetated infiltration ponds or swales will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and to control the accumulation of sediments in order to maintain the water quality volume. Any woody vegetation or accumulated sediment must be removed. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

Sub-surface:

The infiltration facility will be inspected within the first three months after construction; thereafter the filter will be inspected 2 times per year to ensure that the filter is draining within 72 hours of a rain event equivalent to 1/2" or more. Failure to drain in 72 hours will require part or all of the top 3 inches of the infiltration area to be removed and replaced with new like material. Inspection can be accomplished by using the observation well, inspection port, and/or access structure for underground chamber systems.

Manufactured Systems and pretreatment structures

Inspect all upstream pre-treatment measures for sediment and floatables accumulation. Remove and dispose of sediments or debris as needed. Inspect structure on a semi-annual basis by using inspection port and/or access structure. Remove sediment as needed when average depths reach 1" or per the manufacturer's recommendation.

Water Quality Inlets (I.e. manufactured devices):

Inspect at a minimum 2 times per year (preferably in spring and fall) or per the manufacturer's recommendation. The owner will contract with a third-party or other qualified professional with knowledge of erosion and stormwater control for the inspection and as needed, removal of accumulated sediments, oils, and debris within the device and the replacement of any absorptive filters.

Vegetated Areas:

Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

Ditches, Swales and other Open Stormwater Channels:

Inspect 2 times per year (preferably in Spring and Fall) to ensure they are working in their intended fashion and that they are free of sediment and debris. Remove any obstructions to flow, including accumulated sediments and debris and vegetated growth. Repair any erosion of the ditch lining. Vegetated ditches will be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. Correct any erosion of the channel's bottom or sideslopes. The facilities will be inspected after major storms and any identified deficiencies will be corrected.

Treatment Buffers:

Inspect at least once a year for evidence of erosion, concentrating flow, and encroachment by development. If flows are concentrating within a buffer, site grading, level spreaders, or ditch turn-outs will be used to ensure a more even distribution of flow into a buffer. Check down slope of all spreaders and turn-outs for erosion. If erosion is present, adjust or modify the spreader's or turnout's lip to ensure a better distribution of flow into a buffer. Clean-out any accumulation of sediment within the spreader bays or turn-out pools. Manage each buffer's vegetation consistently with the requirements in any deed restrictions for the buffer. Wooded buffers must remain fully wooded and have no disturbance to the duff layer. Vegetation in non-wooded buffers may not be cut more than three times per year, and may not be cut shorter than six inches.

Pervious Pavement:

Paving area will be inspected within the first three months after construction; thereafter the paving area will be inspected 2 times per year to ensure that it is clear of accumulated sediment and debris. Vacuum Sweep at a minimum 4 times per year with a "Regenerative Air" type street sweeper. Inspect the surface for deterioration or spalling. If the parking area does not drain within 72 hours of a rain event equivalent to 1/2" or more, all or part of the parking area will be removed and replaced. Potholes and cracks can be filled with patching mixes unless more than 10 percent of the surface area needs repair (Avoid sealing or repaving with non-porous materials).

Roadways and Parking Surfaces: Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader.